

Serial No. 10/656,326

Attorney Docket No. 01-463

**REMARKS**

Claims 1-40 were pending. Claims 1-13 have been canceled due to restriction. Claims 23 and 35 have been withdrawn. Thus, claims 14-22, 24-34, and 36-40 are now pending. The applicants respectfully request reconsideration and allowance of this application in view of the above amendments and the following remarks.

The applicants note that in the Final Office Action mailed August 9, 2005, the Examiner failed to address claims 38-40, which were submitted in the previous response filed May 26, 2005. Applicants submit therefore that the finality of the present rejection is premature since the disposition of claims 38-40 has not been indicated. Applicants respectfully request withdrawal of finality and consideration of claims 38-40 and the amendment presented herewith.

The applicants note that although the Examiner has not specifically acknowledged the claim for priority under section 119, applicants consider the notation on the filing receipt mails December 1, 2003 as acknowledgement thereof and as notice that all of the certified copies of the priority documents have been received.

Claims 14, 15, 20, 21, 25, 26, 27, 32, 33, and 37 stand rejected under 35 USC 102(e) as being allegedly anticipated by Ishio et al., U.S. Patent No. 6,653,702 (hereinafter "Ishio"). Claim 14 is canceled herein and claims 15, 20, and 25 are amended to depend from new claim 38.

As noted in the previous response, the present invention is characterized in that a common diffusion structure such as any of the structures 2, 3, 4 including the multiple diffusion regions 20, 30, 40 are formed. The trenches 6 are formed *after formation of the diffusion structure* to separate semiconductor components 2a-2d, 3a-3d, 4a-4c, *and to define the size thereof*. Since each diffusion structure is formed larger than the semiconductor components which will be formed, the sizes of the respective semiconductor components can be defined.

Serial No. 10/656,326

Attorney Docket No. 01-463

according to necessary current capacities by changing the number of the diffusion regions such as regions 20, 30, 40 included by the trenches. Thus, the diffusion regions are used as units when forming the trench to separate, define the size of, and thus define the capacity of each semiconductor component.

In stark contrast, in Ishio et al., *the trenches 14 are formed first*, (see, e.g. col. 4, line 30) and then, the plural circuit elements 4-6 are formed by diffusion processes. Thus Ishio fails to disclose the claimed invention where, *inter alia*, a common diffusion structure is formed in the region in which the semiconductor components are formed, and parts of the diffusion structure are separated from a surrounding area thereof *by trenches* to form the semiconductor components along with *defining sizes of the semiconductor component*. Applicants further incidentally note that in Ishio, et al., the alleged diffusion structure 11 is described as a laminated substrate (see, e.g. col. 3, lines 13-17). The laminated substrate 11, at best, contains layers of different n+, n-, p+, or p- concentrations, but fails to contain a diffusion structure as claimed as can be seen from FIG. 2A in Ishio. The claimed diffusion structure can be understood, as noted above, with reference to, for example, elements 2, 3, or 4 of FIG 1A of applicants specification.

Accordingly, the Examiner has not met the burden of establishing a *prima facie* case of anticipation in that, for at least the reasons set forth above, Ishio et al. fails to disclose all the features of the claimed invention. Therefore, the rejection of claims 26 should be reconsidered and withdrawn.

Claims 27, 32, 33, and 37 by virtue of depending from claim 26 are allowable for at least the reasons set forth herein above. It is respectfully requested that the rejection of claims 15, 20, 21, 25, and 27, 32, 33, and 37 be reconsidered and withdrawn. Claims 15, 20, 21, 25, which now depend from claim 38 are believed allowable in that claim 38 is distinguishable from Ishio for at least the reasons set forth herein above. Favorable consideration is requested.

Serial No. 10/656,326

Attorney Docket No. 01-463

Claims 14, 15, 18, 19, 22, 24, 30, 31, 34, and 36 stand rejected under 35 USC 102(b) as being allegedly anticipated by Koyama et al., U.S. Patent Application Publication No. 2001/0032990 (hereinafter "Koyama"). Claim 14 is canceled herein and claims 15, 18, 19, and 22 are amended to depend from new claim 38.

Claims 30, 31, 34, and 36, by virtue of depending from claim 26, are allowable for at least the reasons set forth hereinabove. It is respectfully requested that the rejection of claims 30, 31, 34, and 36 be reconsidered and withdrawn. Claims 15, 18, 19, and 22 are amended herein to depend from claim 38 which contains features not disclosed in Koyama.

In particular, as noted in the previous response, Koyama also fails to disclose the claimed trench as discussed above. In support of the rejection, Figs 1 and 3 of Koyama et al. are cited. Applicants first note that Fig. 1 is an electric circuit diagram, so it is not clear how a trench structure can possibly be shown. Also, since Fig. 3 of Koyama designates only a device 200, and since reference is made to a Fig. 8 of U.S. Patent No. 6,104,076, not of record, and withdrawn from issue, there is no support for the allegation that a trench structure is shown in Fig. 3. The Examiner as previously requested has not specifically pointed out where in the reference the claimed feature is disclosed as required. Since no specific indication has been made as to what feature of Koyama is alleged to amount to the claimed trench, and since no trench appears to be shown, the applicants submit that the Examiner has not met their requirement. Further, a *prima facie* case of anticipation has not properly been established since, Koyama et al. fails to disclose a trench as claimed, e.g. to separate the semiconductor component and to define the size thereof. Thus Koyama fails to disclose or suggest the features of claim 38. Favorable consideration is therefore requested of claim 38 and claims 15, 18, 19, 22, 24 depending therefrom.

Serial No. 10/656,326

Attorney Docket No. 01-463

Claims 16 and 28 stand rejected under 35 USC §103(a) as being allegedly unpatentable over Ishio and Koyama as independently applied. The rejection is respectfully traversed.

Applicants first note that claim 28, by virtue of depending from independent claim 26, is allowable for at least the reasons set forth hereinabove. Further claim 16, by virtue of depending from claim 38 is believed allowable in that claim 38 is distinguishable over the prior art and, in particular, the applied art. Moreover, claims 16 and 28 are independently allowable for the following reasons.

Applicants further note that Examiner admits that both Ishio et al. and Koyama fail to teach the feature of claims 16 and 28. Contrary to the Examiner's assertion, the thickness of 5µm is not a matter of routine experimentation. According to applicants' specification on page 17, lines 4 to 9 thereof, the thickness of 5µm of the P-type diffusion layer (semiconductor layer) 15 is specifically and deliberately selected, after careful consideration by applicants, so that the trenches can be easily filled in with BPSG, for example to facilitate manufacture. As admitted, Ishio et al. and Koyama et al. do not explicitly teach that a semiconductor layer on an insulating layer is equal to or less than five microns as claimed. Thus a *prima facie* case of obviousness has not been established in that the references fail to teach or suggest all the claimed features as admitted by the Examiner.

Accordingly, it is respectfully requested that the rejection of dependent claim 28 be reconsidered and withdrawn and claim 16 be given favorable consideration.

Claims 38-40 were submitted in the previous response to more clearly distinguish over the applied art and contain features which should require no further search. For example, in claim 38 the feature of forming a diffusion structure *including a repeated pattern of diffusion regions* common to the kind in an area of the substrate, in which the semiconductor component is

Serial No. 10/656,326

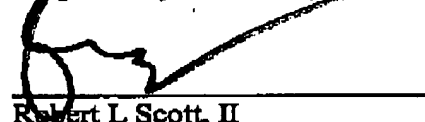
Attorney Docket No. 01-463

to be formed is distinguishable over the prior art and was included in the originally claimed subject matter.

In view of the foregoing, the applicants respectfully submit that this application is in condition for allowance. A timely notice to that effect is respectfully requested. If questions relating to patentability remain, the examiner is invited to contact the undersigned by telephone.

Please charge any unforeseen fees that may be due to Deposit Account No. 50-1147.

Respectfully submitted,



Robert L. Scott, II  
Reg. No. 43,102

Posz Law Group, PLC  
12040 South Lakes Drive, Suite 101  
Reston, VA 20191  
Phone 703-707-9110  
Fax 703-707-9112  
Customer No. 23400